AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-16. (cancelled)

17. (new) A semiconductor device comprising:

an insulating layer on a semiconductor substrate;

a conducting portion in said insulating layer; and

a modified layer between said insulating layer and said conducting portion,

wherein said insulating layer includes hydrogenated polysiloxane, and wherein said modified layer is a layer of modified hydrogenated polysiloxane.

18. (new) The semiconductor device according to claim 17, wherein said modified layer tapers in thickness so that a portion of said modified layer far from said semiconductor substrate is thicker than a portion of said modified layer near said semiconductor substrate.

19. (new) The semiconductor device according to claim 18, wherein said conducting portion tapers in width so that a portion of said conducting portion far from said semiconductor substrate is wider than a portion of said conducting portion near said semiconductor substrate.

20. (new) The semiconductor device according to claim 17, wherein said modified layer is a layer of oxidized hydrogenated polysiloxane.

21. (new) The semiconductor device according to claim 17, wherein said hydrogenated polysiloxane includes at least one of a ladder type hydrogenated polysiloxane and a porous ladder type hydrogenated polysiloxane.

22. (new) The semiconductor device according to claim 17, wherein said conducting portion is a wiring, and said modified layer is attached to a side of said wiring.

23. (new) The semiconductor device according to claim 22, wherein a portion of said conducting portion far from said semiconductor substrate is thicker than a portion of said conducting portion near said semiconductor substrate.

24. (new) The semiconductor device according to claim 22, wherein said conducting portion includes:

a first conducting portion which is a bottom and side part of said conducting portion, and

a second conducting portion which is a remaining part of said conducting portion, made from copper.

25. (new) A manufacturing method of a semiconductor device, comprising the steps of:

(a) forming an insulating film on a semiconductor substrate, wherein said insulating film includes hydrogenated polysiloxane;

(b) etching said insulating film to form a trench, wherein an etching gas including a fluorocarbon gas and an oxidant gas is used for said etching;

(c) forming an interconnection in said trench.

26. (new) The manufacturing method of a semiconductor device according to claim 25, wherein said step (b) includes:

(b1) transforming a part of said insulating film to a layer of modified hydrogenated polysiloxane by using said etching gas, wherein said part of the insulating film is in a side wall of said trench.

27. (new) The manufacturing method of a semiconductor device according to claim 26, wherein the modified layer tapers in width so that a portion of said modified layer far from said semiconductor substrate is thicker than a portion of said modified layer near said semiconductor substrate.

28. (new) The manufacturing method of a semiconductor device according to claim 27, wherein said oxidant gas includes at least one of O_2, CO and CO_2.

29. (new) The manufacturing method of a semiconductor device according to claim 27, wherein said fluorocarbon gas includes at least one of CF_4, C_4F_8, C_5F_8, C_2F_6, CH_2F_2 and CHF_3.

30. (new) A semiconductor device comprising:

a first insulating layer on a substrate;

a trench in said first insulating layer;

a conductive layer in said trench; and

a second insulating layer between said first insulating layer and said conductive layer,

wherein said trench has a first part which is wider than a second part, and

a thickness of said second insulating layer tapering from said wider part of said trench to the other part of said trench so that said second insulating layer adjacent to said first part is thicker than adjacent to said second part.

31. (new) The semiconductor device according to claim 30, wherein said first part is an upper part of said trench and said second part is a lower part of said trench.

32. (new) A semiconductor device comprising:

a first layer of dielectric material on a substrate;

a trench in said first layer, said trench having side walls that are oblique to a surface of said first layer;

a conductor in said trench; and

a modified layer between said conductor and said first layer, said modified layer being a modified form of the dielectric material of said first layer, said modified layer having a tapered thickness so that an interface between said modified layer and said first layer is at a different angle to the surface of said first layer than said side walls of said trench.

33. (new) The device of claim 32, further comprising a barrier metal nitride between said conductor and said modified layer.

34. (new) The device of claim 32, wherein the dielectric material is hydrogenated polysiloxane and said modified layer is an oxidized form of hydrogenated polysiloxane.